

Form 11 Moderate Degree Change Proposal Questionnaire

PART A Fundamental Information Required for all Moderate Degree Change Proposals

- 1 Institution Name: Washington State University
- 2 Institutional Endorsement of Moderate Degree Change Proposal by Chief Academic Officer



July 29, 2009

Endorsement by Chief Academic Officer (Signature)

Date

Print Name and Title Warwick M. Bayly , Provost and Academic Vice President

3 Contact Information (Academic Department Representative):

Name: Claudio O. Stöckle
Title: Chair, Biological Systems Engineering
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4 Degree Title Change:

Current title (pre-change): MS Engineering and PhD Engineering Science
Proposed title (post-change): MS and PhD Biological and Agricultural Engineering
Start date(s) for new degree(s): Fall 2009
End date(s) for old degree(s): Fall 2009

Note: the degree title consists of three elements: level, type, and major. For example, a BA in Psychology is a bachelor (level) of arts (type) degree in Psychology (major).

5 Type of Change Requested (Check One):

- ☒ Conversion of eligible options, specializations, or concentrations into degrees
- ☐ Consolidation of two or more eligible degrees into a single new degree
- ☐ Change in level of an eligible program's degree designation
- ☐ Other (describe): _____

Note: "Other" changes need to be accompanied by a formal written exception request.

6 Rationale for Treatment of Change as a Moderate Degree Change

Why should the proposed degree change be categorized as a moderate degree change rather than a change requiring a full proposal for a new degree program?

See Narrative Summary

7 Accreditation

7a What kind(s) of program-specific accreditation are available?

7b What program-specific accreditation has been obtained or will be obtained, and when?

(If program-specific accreditation is available but will not be obtained, explain.)

7c How will the proposed program change affect program-specific accreditation?

(For example, will the program's accreditation change? Will the program change allow the program to retain its existing accreditation?)

None – Not applicable

8 Other Basic Information

8a Will the degree-granting unit change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, what are the old and new degree-granting unit names?

If no, what is the ongoing name?

8b Will the CIP code change?

<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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If yes, identify old and new CIP codes: Old: 14.0101; New: 14.0301

If no, identify ongoing CIP code: _____

8c Concentrations, options, or specializations

- ☒ Will not change
- ☐ Will change as follows: _____

8d Location(s) and mode(s) of delivery (check one):

- ☒ Will not change
- ☐ Will change as follows: _____

NOTE: Changes in location or addition of distance delivery must be accompanied by a Location Notification of Intent (LNOI).

8e Scheduling (day, evening, weekend) and attendance options (full-time, part-time):

- ☒ Will not change
- ☐ Will change as follows: _____

8f Have any of the programs involved in the change been involved in previous MDCPs?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, which programs, which MDCPs, and when?

9 Short Form Questions for Externally Mandated Changes

9a

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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The institution certifies that the proposed change is mandated by an external accrediting, licensing, or other regulatory authority and that the proposed change will not affect the program's degree level, curriculum, or faculty, and will not have an adverse impact on any student's learning experience.

If yes, describe the mandate and state its effective date:

Important instruction:

If the answer to question #9a is yes, answer question 9a and skip the rest of the questionnaire, including #9b and all of Part B.

The intent here is to capture, as simply as possible, externally mandated changes requiring a stand-alone degree or new title, but not a change in degree level.

9b

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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(For changes in degree level only.) Is the change in degree level externally mandated?

Important instruction:

If the answer to question #9b is yes, then Part B question #10 is optional.

If the answer to question #9b is no, then Part B question #10 is required.

Part B questions #11-16 are required in both cases.

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PART B Additional Information Required for Certain Proposals**Important instruction:**

For the sake of flexibility, the HECB will allow institutions the option of responding to Part B questions either by filling out the questionnaire completely, or by addressing the “yes or no” components of the Part B questions within the questionnaire form itself and addressing the other informational requirements by attaching a unified narrative response. If the institution chooses the unified narrative response approach, it must still submit Part B of the questionnaire, with answers to all “yes or no” questions clearly indicated.

*For questions requiring more than just a “yes or no” answer, the institution may elaborate in an attached unified narrative response, rather than in the body of Part B of the questionnaire. All such **narrative elaboration must be cross-referenced to specific questions in the questionnaire.***

For example, an institution electing to use the unified narrative response approach would fill out question #14c by checking “yes” and making a cross-reference statement such as “See narrative, page 5, paragraphs one and two.”

10 Rationale for Change

Provide a rationale for making the proposed change at the proposed time, including:

- An overview describing the proposed change (including what is changing and why).
- A history of relevant, existing, pre-change programs and a description of how they have evolved over time.
- A description of how the change will benefit students and employers in the changing workplace.
- A description of the community need for the proposed moderate degree change.
- A description of how the proposed change will align with or help implement the Statewide Strategic Master Plan for Higher Education.

[See Narrative Summary](#)

11 Projected Enrollment:

Year 1 (enter year here _____)

FTE: _____

Full Enrollment (year _____)

FTE: _____

[See Enrollment History](#)**12 Cost of the Change:**Start-up \$ _____ Explain: None

Source: \$ _____ State FTE

\$ _____ Self Support

\$ _____ Other - Explain: _____

Ongoing \$ _____ Explain: No Change

Source: \$ _____ State FTE

\$ _____ Self Support

\$ _____ Other - Explain: _____

NOTE: Report only those start-up and ongoing costs attributable to the change.**13 Evidence for Student and Employer Need****(Enrollment/graduation data for existing program(s) and other data, if appropriate)**

13a Name of Pre-Change Program _____

(one table for each program involved; submit additional tables as attachments, as needed)

Table 13.1 Enrollment and Graduation Statistical History

	Year	# of Qualified Applicants (If available)	# of Admission Offers (If available)	Total Enrollment (FTE)	# of Graduates (Headcount)	Job Placement Rate (If available)
Current Year	2009			60	--	--
1 Year Ago	2008-09			50	10	100%
2 Years Ago	2007-08			33	11	100%
3 Years Ago	2006-07			37	11	100%
4 Years Ago	2005-06			40	8	100%
5 Years Ago	2004-05			45	7	100%

- 13b What percentage of program graduates, on average, pursues higher degrees after graduation (if available)? 40% (MS students continuing to obtain PhD)
- 13c What percentage of program graduates, on average, obtains employment appropriate to their training (if available)? 100%
- 13d Provide other evidence of student and employer need, if appropriate (for example, if the data requested in 13a-13c may not be a good indicator of future need).

See Narrative Summary

- 13e If the proposed change involves a degree level change that is not externally mandated, provide additional evidence for student and employer need for degrees at the post-change degree level. The additional evidence must be similar to that which would be provided in a full proposal for a new degree.

Notes:

13.1 The data in item 13 is intended to serve as a proxy for the student and employer need data required in a full proposal for a new degree.

13.2 The year column in table 13.1 is for academic years.

14 Pre- to Post-Change Comparisons

14a Will the target student audience change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, compare and contrast the pre- and post-change target audience of students, noting any changes.

14b Will the admission requirements change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, compare and contrast the pre- and post-change admission requirements, noting any changes. Also, if pre-requisite courses are changing, list and describe the changes.

14c Will the learning objectives change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, compare and contrast the pre- and post-change learning objectives for students, noting any changes.

14d Will the normal time to graduate change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, summarize changes.

14e Will the faculty change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, provide a paragraph or two summarizing faculty changes. Include a summary of significant anticipated changes in faculty personnel. Include a summary of significant anticipated changes in faculty qualifications. For example, if a degree program is changing level from a baccalaureate to a master's program, will the proposed new master's program feature a higher level of full-time tenure-track faculty holding doctoral degrees than the baccalaureate program that it is replacing?

14f If the answer to 14e is yes, fill out the following program faculty table:

Table 14.1 Faculty FTE Changes

Number of FTE Provided for Program(s) by:	Pre-Change # of FTE	Post-Change # of FTE
Full-Time Tenure-Track Faculty with Highest Degree at:		
Doctoral Level		
Master's Level		
Other (describe other degrees or qualifications)		
Full-Time Non-Tenure-Track Faculty with Highest Degree at:		
Doctoral Level		

Master's Level
Other (describe other degrees or qualifications)
Part-Time Faculty with Highest Degree at:
Doctoral Level
Master's Level
Other (describe other degrees or qualifications)
Total FTE for program(s)

Description of other degrees or qualifications, if applicable:

Full-time tenure-track faculty

Full-time non-tenure-track
faculty

Part-time faculty

14g Will the facilities change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, summarize changes.

14h Will the curriculum change?

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
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If yes, provide a paragraph or two summarizing curriculum changes. Include total number of credits pre- and post-change, and specify how many credits pre- and post-change are required and elective.

Attach a table such as example table 14.2, in which a Developmental Psychology option within a BA Psychology degree is being converted to a BA in Developmental Psychology.

Table 14.2 Curriculum Changes - EXAMPLE

Required Courses for Post-Change Program		
Course Number		Credits
DPSY 300 (formerly PSYCH 300)	Intro to Developmental Psychology	5
*DPSY 305 (formerly PSYCH 305)	Early Development (formerly Early Childhood Psych)	5
*DPSY 307 (new course)	Psychology of Adolescence	4
Etc.		Etc.
Total Required Credits		45
Elective Courses for Post-Change Program		
*SOC 310 (new elective)	Sociology of Families with Young Children	3
Etc.		Etc.
Total Elective Credits		45
Total Credits in Program		90

Important instructions for Table 14.2

- Please attach a similarly formatted table that includes all of the elements in table 14.2.
- For each course, note changes in parentheses.
- Put an asterisk (*) in front of new courses and courses with curricula that will change significantly.
- Add notes to describe changes not easily captured in a tabular format.

15 Internal Analysis

Briefly describe the internal analysis upon which the MDCP is based. Include:

- Dates of most recent program review and program-specific accreditation review.
- Indication of whether the analysis is based on a program review and/or program-specific

accreditation review.

- Description of institutional personnel, committees, or other groups that have been involved with the change, and their roles.

Note: The analysis does not have to be based on program review or program-specific accreditation review, but if it is not, indicate what other information the analysis is based on.

[See Narrative Summary](#)

16 External Expert

16a Attach a statement or report from an external expert from a peer institution or a program-specific accrediting body indicating whether the proposed changes:

- Would result in a program that:
 - Has an appropriate degree title and degree level.
 - Demonstrates a coherent design, with depth, breadth, and curriculum appropriate for the degree title and level.
 - (For conversions only) Makes sense as a separate major.
- Are consistent with trends in the field.
- Are responsive to recent or anticipated changes in regulatory, licensing, or accreditation requirements.

16b Attach a brief description of the external expert's qualifications. The external expert must be selected in accordance with the same guidelines used in selecting external experts to review full proposals for a new degree program.

An exception to the external review is requested for this proposal, as this is a long-running, successful program that was fully reviewed when it was originally approved under the old name.

Narrative Summary Information

The Department of Biological Systems Engineering (BSE), in the College of Agricultural, Human, and Natural Resource Sciences, has had a stable, solid graduate program for several decades, with students earning generic College of Engineering and Architecture degrees: M.S. in Engineering and Ph.D. in Engineering Science. BSE has over 40 peer departments in major land-grant universities around the nation, which offer similar graduate programs, with our program performing among the top 10 in the nation, based on benchmark data collected by the American Society of Agricultural and Biological Engineers. However, the lack of graduate degrees specifically associated with the Department of Biological Systems Engineering has begun to hurt its position nationwide as a leading institution of graduate education in Biological and Agricultural Engineering, particularly given an emerging interest in informal rankings provided by such outlets as the US News and World Report magazine (we ranked 19 on the first ranking of Biological and Agricultural Engineering graduate programs produced by this magazine in 2009, which is surprising considering that we do not have such a degree name). WSU, therefore, seeks approval for M.S. and Ph.D. degrees specifically titled as Biological and Agricultural Engineering so that they are accurately recognized within the field, as well as by prospective students and employers.

Since the M.S. Engineering and Ph.D. Engineering Sciences degrees are also used for interdisciplinary engineering programs in the College of Engineering and Architecture, WSU is not suggesting that the current degree titles be eliminated.

Rather this proposal requests that the name of the degrees currently being awarded to students in the CAHNRS Department of Biological Systems Engineering be changed to *M.S. and Ph.D. in Biological and Agricultural Engineering*. By no means are we requesting the creation of new degrees. The department has guided and graduated masters and doctoral students under the Engineering Science title for more than 20 years; the graduate program and the research underlying the program is well funded; and the program has large graduate student numbers. There is no need for new resources.

The Department's Graduate Program

The department's graduate program focuses on process engineering of biological materials and land/water/environmental engineering, offering specialization in four areas: Food Engineering; Bio-energy and Bio-products Engineering; Land, Air, Water Resources and Environmental Engineering; and Agricultural Automation. These areas of emphasis are strongly supported by research activities, conducted by a nationally and internationally-recognized faculty.

Table 1 shows the number of graduate students enrolled in the program and the number of graduates for each of the last seven years. The enrollment for fall 2009 will be of at least 60 students, a number representing an average of over five students per faculty member (not counting the departmental chair). Our interest now is to stabilize the number of students at about 50 to 60 while further enhancing the quality of the program and its position among the top programs in the nation.

Table 1. Number of students (based on Fall semester enrollment) and Number of MS and PhD Graduates by Year – Past Five Years

Year	Graduate Students Enrolled	MS Graduates	PhD Graduates
FY2002	42	2	2
FY2003	41	2	4
FY2004	45	2	5
FY2005	40	1	7
FY2006	37	4	7
FY 2007	33	3	8
FY 2008	50	3	7

All graduates from the program obtain employment as faculty members in international and US universities or as research associates in research institutions. Some of them are employed by industry and governmental agencies. We are not aware of any graduate of our program that has not secured employment rapidly after graduation, based on the training received.

Departmental Resources Supporting the Graduate Program

Twelve faculty FTEs currently support this engineering graduate program. This group of faculty has the support of five state-supported research technicians and four office administrative and clerical FTEs. Other state-funded support positions include four research assistants.

Table 2 summarizes expenditures and allocations for sponsored projects in calendar year 2008. Expenditures for the year amounted to \$3,416,562, representing a ratio of extramural to state research allocations of 2.5 to 1.0. New allocations from sponsored projects in 2008 were \$3,125,824. This level of grant activity supported an engineering graduate program with 50 students (average for the calendar year), funded 22 research associates and technicians, and allowed interactions with 14 visiting scientists. Expenditures on sponsored projects have remained above \$2.3 million for the last three years.

Table 2. Expenditures and allocations for sponsored projects for calendar year 2008

2008 Allocations	Balance from Previous Year	Available in 2008	Expenditures
\$3,125,824	\$4,248,927	\$7,374,751	\$3,416,562

The scholarly output of the unit in 2008 was substantial (*Table 3*). These figures represent a strong record of scholarly accomplishments, with several research programs in the department being nationally and internationally recognized.

Table 3. Departmental scholarly activity in calendar year 2008

Total Number	
PR-Journal Articles	99
Proceedings	11
Books	1
Book Chapters	8

These figures are similar for the last three years and represent a solid indicator of the productivity of the faculty and a guarantee of strong support for our graduate program.

Table 4 shows that the department's graduate program compares very favorably with similar programs in peer institutions. It has a solid foundation that justifies expectations for enhancing the quality and reputation of the department.

Table 4. Ranking for selected benchmarks comparing the graduate program at WSU with similar programs at peer institutions and with peers affiliated with the American Society of Biological and Agricultural Engineers (ASABE).

Benchmark	Rank Among 13 WSU Peers	Rank Among 20 ASABE Peers
Total Number of Graduate Students	6 th	6 th
Number of PhD Students	1 st	1 st
PhD/MS Ratio	1 st	1 st
Number of Students per Faculty FTE	1 st	2 nd
Average Number of Graduates – Last 3 Years	9 th	11 th
Average Number of PhD Graduates – Last 3 Years	3 rd	3 rd
Number of Graduate Students / Intramural GRAs	1 st	1 st

Conclusion

The university is requesting that students earn M.S. and Ph.D. degrees in Biological and Agricultural Engineering in order to give the department credit for the work that they are already doing to provide instruction in areas better described by the proposed names of the degrees. It will contribute to the recognition and prominence of the department within the field and among prospective graduate students. This change will also make the nature of the degrees more apparent to people reading the transcripts of our graduates.

This change has been approved by the Provost, the Graduate School, the Graduate Studies Committee, and the Faculty Senate.